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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/671,670	09/28/2000	Yoji Ito	030662-063	7268

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EXAMINER
NGO, HUYEN LE

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 12/20/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/671,670	Applicant(s) ITO, YOJI	
	Examiner Julie-Huyen L. Ngo	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-10 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-10 is/are rejected.

7)☒ Claim(s) 1-10 is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been received and placed on record.

Information Disclosure Statement

The information disclosure statement filed January 23, 2001 (paper no. 3) has been considered.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "angle" formed between "the direction giving the maximum refractive index," and "the layer plane" recited in claims 1 and 10 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities:

There are numerous misspelled words such as "angel" through out the specification, e.g., in lines 25, 29 of page 2 and in line 4 of page 3.

The abstract of the disclosure is objected to because "the direction giving the maximum refractive index," and "the layer plane" need to be defined and the structural

relationship of this direction and the layer plane in reference to other elements of the polarizing plate, including the liquid crystal layer, the second optical anisotropic layer and the polarizing membrane, etc... need to be described.

Correction is required.

Claim Rejections - 35 USC § 112

Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1 and 10, it is unclear what direction is considered to be "the direction giving the maximum refractive index, and what plane is considered to be "the layer plane" as recited in these claims. According to the specification (p. 6, lines 15-16), the Examiner construes "the direction giving the maximum refractive index" to be the direction in which the major axes of the molecules are aligned, and "the layer plane" to be the plane parallel to the surface of the second anisotropic layer, for examination purposes.

Claims not specifically mentioned above are rejected as bearing the defect(s) of the claim(s) from which they depend.

Claim Objections

Claims 1-10 is objected to because of the following informalities:

In claims 1 and 10, the word "angle" is misspelled as "angel" in lines 7 and 11.

Claims not specifically mentioned above are objected to as bearing the defect(s) of the claim(s) from which they depend.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 and 4-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aminaka (US6064457A).

Aminaka discloses a liquid crystal display (figs. 5 and 6) including a liquid crystal cell (10) of Twisted Nematic (col. 21, lines 59-65) comprising:

- Two ellipsoidal polarizing plates arranged on both sides of the LCD cell, each ellipsoidal polarizing plate comprises:
  - A first optical anisotropic layer 31
  - A second optical anisotropic layer 33
  - A polarizing membrane 34
  - A transparent protective film (col. 21, lines 22-32)

  Wherein the first optical anisotropic layer (Fig. 3 and col. 6, lines 66 to col. 7, lines 23) has angle of 15° to 50° [an inclined angle between the aligned direction of the major axes of the planer molecules (31a to 31e) in the first anisotropic layer and the layer plane parallel to the surface of the second anisotropic layer 33, col. 7, lines 15-16]. Aminaka discloses in Figs. 5 and 7 that the second optically anisotropic layer 33A or 33B is an optically positive and uniaxial since the molecules in these layers having the slow axis/direction of

maximum refractive index is larger than the slow axis/direction of minimum refractive index (col. 4, lines 47-52). Aminaka also teaches an angle of 0° to 5° between the direction giving the maximum refractive index and the second anisotropic layer plane (col. 4 lines 41-47). Note that the ranges for the angles disclosed by Aminaka are within the angle ranges of 5° to 85° and 0° to 5° recited in claims 1 and 10. Therefore, the angle ranges in claims 1 and 10 would have been obvious in view of the angle ranges disclosed by Aminaka (See In re Malagari, 499 F.2d 197, 182 USPQ 549 (CCPA 1974)).

With respect to claims 4 and 5, Aminaka discloses an ellipsoidal polarizing plate, wherein the second optically anisotropic layer is uniaxially stretched polymer film (col. 20, 56-60), which is made of cellulose ester film (col. 22, lines 42-45).

With respect to claim 6, Aminaka discloses an ellipsoidal polarizing plate, wherein the first and second optically anisotropic layers are so arranged that the projection of the direction of the maximum refractive index (on slow axis) in the first optically anisotropic layer onto the layer plane is essentially perpendicular, on the same plane, to the direction giving maximum refractive index (on slow axis) in the second optically anisotropic layer (col. 23, lines 60-64).

With respect to claim 7, Aminaka discloses an ellipsoidal polarizing plate, wherein the plate comprises the first optically anisotropic layer, the second optically anisotropic layer, the polarizing membrane, and the transparent protective film (membrane) in this order (col. 21, lines 30-32).

With respect to claims 8 and 9, Aminaka discloses in abstract an ellipsoidal polarizing plate, wherein the second optically anisotropic layer and the polarizing membrane are so arranged that the direction giving the maximum refractive index in the second optically anisotropic layer is essentially perpendicular to the transmission axis of the polarizing membrane (claim 8) or parallel to the transmission axis of the polarizing membrane (claim 9).

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aminaka (US 6064457) as applied to claim 1 above, and further in view of Kawata (US 6061113) and Japanese Patent Provisional Pub. No. 3(1991)-87720 (incorporated in col. 1, lines 46-58 of US Pat. No. 6061113).

With respect to claim 2, it is well known and conventional in the art to form an anisotropic layer/optical compensation sheet comprising of rod-like liquid crystal for light- weight and low power consumption, as disclosed by Kawata (col. 1, 46-58) and evidenced by Japanese Patent Provisional Pub. No. 3(1991)-87720. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to form the first optical anisotropic layer in the LCD device of Aminaka of rod-like liquid crystal for the reasons set forth above.

With respect to claim 3, Aminaka discloses (col. 7, lines 11-16) that as the distance between the molecules (31a-31e) and the oriental layer increases along the normal line of the transparent substrate (33), the inclined angles increased. Therefore, one skilled in the art would expect that the inclined angle of each rod-like liquid crystal

molecule in the first optical anisotropic layer to vary according to the distance between the molecule and the surface of the second optical anisotropic layer.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US 6034755 A disclose a liquid crystal cell comprises liquid crystal molecules provided between two electrode substrates, an optical compensatory sheet comprises a transparent substrate and an optically anisotropic layer. The transparent substrate is optically anisotropic. The optically anisotropic layer contains a discotic compound.

US 5805253 A disclose a liquid crystal display with compensators having minimum retardations in the inclined direction.

US 5793455 A disclose an eliptically polarizing plate and liquid crystal display in which a compensation sheet direction of non-zero minimum retardation is inclined at 5 to 50 degrees.

Contact Information

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Julie Ngo, whose telephone number is (703) 305-3508.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, whose telephone number is (703) 308-0956.

Papers related to this application may be submitted to Art Unit 2871 by facsimile transmission. The Examiner direct fax number is (703) 746-4709. Please call before sending any paper.

Julie Huyen L. Ngo

December 15, 2001

Patent Examiner
Art Unit 2871